

WHAT IS CLAIMED IS:

1. A system comprising:
an implantable medical device including an electronic circuit;
a near field antenna connected to the electronic circuit for conducting inductively coupled wireless communication with the implantable medical device; and
a far field antenna connected to the electronic circuit for conducting radio frequency (RF) wireless communication with the implantable medical device according to a duty cycle.
2. The system of claim 1, wherein the electronic circuit includes a cardiac rhythm management device.
3. The system of claim 1, wherein the near field antenna includes a coil.
4. The system of claim 1, wherein the far field antenna includes a dipole antenna.
5. The system of claim 1, wherein the far field antenna includes a monopole antenna.
6. The system of claim 1, wherein the far field antenna includes a conductor of a therapy lead.
7. The system of claim 1, wherein the far field antenna includes a circumferential antenna.
8. The system of claim 1, wherein the electronic circuit includes a programmable therapy circuit.

9. The system of claim 1, wherein the electronic circuit includes a patient monitoring circuit.
10. The system of claim 1, wherein the electronic circuit includes a diagnostic circuit.
11. The system of claim 1, wherein the electronic circuit includes an RF transmitter, an RF receiver, or an RF transceiver.
12. The system of claim 1, further comprising a programmer for wirelessly communicating with the implantable medical device.
13. The system of claim 12, further comprising an external coil connected to the programmer.
14. The system of claim 12, further comprising an RF antenna connected to the programmer.
15. The system of claim 12, further comprising a set of instructions adapted for execution by the programmer for receiving a signal from the implantable medical device.
16. The system of claim 12, further comprising a set of instructions adapted for execution by the programmer for transmitting a signal to the implantable medical device.

17. A method comprising:
coupling a plurality of wireless transmitters of an implantable medical device to a circuit of the device; and
programming the device to select one or more of the plurality of wireless transmitters for transmitting an outbound signal.
18. The method of claim 17 wherein programming the device to select one or more of the plurality of wireless transmitters includes programming the device to select a transmitter having an inductively coupled antenna.
19. The method of claim 17 wherein programming the device to select one or more of the plurality of wireless transmitters includes programming the device to select a transmitter having a far field radiation antenna.
20. The method of claim 17, further comprising providing a receiver adapted to receive the outbound signal at a far field distance from the implantable medical device.
21. The method of claim 17 wherein programming the device to select one or more of the plurality of wireless transmitters for transmitting an outbound signal includes programming the device to deselect a far field radio frequency (RF) transmitter of the plurality of wireless transmitters.
22. The method of claim 17 wherein coupling a plurality of wireless transmitters includes coupling a transmitter adapted for propagating an RF signal.
23. The method of claim 17, further comprising providing circuitry for receiving physiological data at the implantable medical device.

24. The method of claim 17, further comprising providing circuitry for receiving an operational parameter at the implantable medical device.

25. The method of claim 17, further comprising coupling at least one wireless receiver to the circuit.

26. The method of claim 25, further comprising providing programming to decode data received by a wireless receiver selected from the at least one wireless receiver.

27. The method of claim 25, further comprising providing programming to store data in a memory of the implantable medical device based on an inbound signal received by a wireless receiver selected from the at least one wireless receiver.

28. The method of claim 25, further comprising providing programming to operate the implantable medical device based on data encoded in the inbound signal.

29. A method comprising:
receiving an inbound wireless signal at an implantable medical device;
selecting one of a plurality of receivers of the implantable medical device; and
at the output of the selected receiver, decoding data from the inbound wireless signal.

30. The method of claim 29, further comprising storing the decoded data in a memory of the implantable medical device

31. The method of claim 29, further comprising delivering therapy based on the decoded data.

32. The method of claim 29, wherein receiving an inbound wireless signal includes receiving an inbound wireless signal at a far field distance from a transmitter that propagated the inbound wireless signal.

33. The method of claim 29, wherein receiving an inbound wireless signal includes receiving an operational parameter for the implantable medical device.

34. The method of claim 29, further comprising storing data in a memory of the implantable medical device based on the decoded data.

35. The method of claim 29, further comprising operating the implantable medical device based on the decoded data.

36. A method comprising:
receiving a first wireless signal from a near field transmission source;
opening a channel to communicate using a wireless far field link;
receiving data on the channel;
closing the channel after a predetermined period;
storing the data in memory of an implantable medical device; and
operating the implantable medical device based on the memory.

37. The method of claim 36, wherein receiving a first wireless signal includes receiving an inductively coupled signal.

38. The method of claim 36, wherein opening a channel includes powering a radio frequency receiver.

39. The method of claim 36, further comprising receiving an update command before operating the implantable medical device based on the memory.

40. The method of claim 39, wherein receiving an update command includes receiving an update command from the near field transmission source.

41. A method comprising:

powering a near field link of an implantable medical device;

powering a far field receiver of the device according to a duty cycle;

transmitting a near field acknowledge signal using the near field link if a near field signal is received; and

powering a far field transmitter of the device after having received a far field key signal using the far field receiver during a time when the far field receiver is powered.

42. The method of claim 41 further comprising transmitting a far field acknowledge signal using the far field transmitter.

43. The method of claim 41 further comprising continuously powering the far field receiver after receiving a suspend duty cycle signal.

44. The method of claim 43 wherein receiving the suspend duty cycle signal includes receiving a near field signal.

45. The method of claim 43 wherein receiving the suspend duty cycle signal includes receiving a far field signal.

46. The method of claim 41 wherein powering the near field link includes continuously powering the near field link.